DOCUMENT RESUME

ED 405 738 FL 024 477

AUTHOR Hunt, Alan
TITLE Constraints on Inferring Word Meaning from Context.
PUB DATE Feb 96
NOTE 13p.
PUB TYPE Reports - Evaluative/Feasibility (142) -- Journal Articles (080)
JOURNAL CIT Kansai Gadai University Journal of Inquiry and Research; n63 p239-49 Feb 1996

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Classroom Techniques; *Context Clues; Foreign Countries; *Language Processing; Learning Processes; Second Language Learning; *Second Languages; *Semantics; Translation; *Vocabulary Development

ABSTRACT

In a discussion of second language vocabulary teaching and learning, the premise is that vocabulary development from context should not be used as a teaching strategy exclusive of other methods, such as direct teaching through word pair translation; rather, these approaches should be seen as complementing each other. Several arguments in favor of inferring word meaning from context are examined, and research comparing this technique to word-pair translation is reviewed. Ways in which vocabulary size and problems with comprehension and retention limit the effectiveness of word meaning inference are discussed, and a procedure for making this technique more effective is outlined. The technique includes these steps: (1) determining the part of speech; (2) examining, and if needed, simplifying the context surrounding the unknown word; (3) analyzing the clauses and sentences before and after the sentence containing the unknown word, to determine relationships between them; (4) guessing the unknown word; and (5) comparing the guess to the unknown word's part of speech and to the context, while remaining aware of the potential for faulty word analysis. A dictionary is to be used if needed to check the guess, and re-analysis performed if needed. Contains 23 references. (MSE)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)
This document has been reproduced as received from the person or organization originating it.
Minor changes have been made to improve reproduction quality.
Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY
Alan Hunt
TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)"

Constraints on Inferring Word Meaning from Context

Alan Hunt

ED 405 738

BEST COPY AVAILABLE

FL024477

関西外国語大学研究論集　第63号　抜刷
Journal of Inquiry and Research
No. 63
February 1996
Kansai Gaidai University
Osaka, Japan

Constraints on Inferring Word Meaning from Context

Alan Hunt

Although inferring vocabulary from context remains a valuable technique for learning vocabulary, recent research has cast doubt on its effectiveness. The premise of this paper is that learning vocabulary from context should not be done exclusive of other methods such as the direct teaching of vocabulary through the use of word pair translation. Rather, these approaches should be seen as complementing each other. After examining several arguments in favor of inferring word meaning from context, this paper briefly reviews research comparing this technique to word-pair translation and then discusses how vocabulary size and problems with comprehension and retention limit the effectiveness of inferring word meaning from context. A procedure for inferring word meaning from context is then presented.

From the outset, a few definitions of key terms are in order. Since recognizing word meaning is a receptive skill, "knowing" a word means being able to identify its meaning in context or to match it with synonyms or definitions. The definition of a "word" in this paper will include its derived forms. For example, "buyer," "buying," "buys," "bought" etc. are derived forms of the word "buy," which can be referred to as a "base form."

The proponents of the contextualized learning of vocabulary cited in this paper include both L1 and L2 researchers. As Haynes (1984) has pointed out, using a top-down contextual approach has been influential in L2 texts since the early 80s. Channel (1988) also notes that until more is known about the mental lexicon of L2 learners, L1 models will continue to be relied upon. Since L2 researchers and teachers continue to use L1 research and models, this paper will examine relevant arguments from both domains.

Learning Vocabulary from Context: Some Arguments in Favor

Some arguments in favor of learning receptive vocabulary from context take it for granted that learners should not study vocabulary in isolation. The reasons given vary from condemnations of the unnaturalness of decontextualized words to the supposed ineffectiveness of rote learning. These proponents of contextual learning consequently claim that all vocabulary activities should be contextualized. Williams (1985), referring to L1 learners, concludes that "vocabulary resides in text, not in isolation. Therefore, vocabulary recognition strategies cannot be taught by means of vocabulary lists (as is often the case, for example, in word analysis exercises)" (p.129).[1] According to Williams, vocabulary should not be taught in isolation because the text is a "natural habitat" (p.129).

Writing about receptive L2 vocabulary acquisition, Crow (1986) argues that receptive vocabulary learning must be contextualized, even at the first stages of learning a word. Considering a small receptive vocabulary as a critical problem for L2 readers, he maintains that vocabulary must be learned through either semantic field or contextualized activities. Teachers should not use decontextualized activities like memorizing word lists, a method which he believes people mistakenly think of when vocabulary development is mentioned (p. 244). As this paper will attempt to show, Williams and Crow tend to overstate the value of contextual learning while being overly pessimistic about the worth of studying vocabulary in isolation.

A more supportable position in favor of learning L1 vocabulary from context is presented by Nagy, Herman, and Anderson (1985). Acknowledging that direct teaching quickly presents individual word meanings, the authors maintain that more words can be learned from context over a longer period of time. Their research is original in that they used multiple choice tests and interviews to measure partial or incomplete knowledge of target words. More specifically, a target word on the multiple choice test would appear three times. Each time the target word appeared, the distractors' level of difficulty would differ based on the degree of similarity between both the distractors' and the target words' parts of speech and meaning. Partial word knowledge was also rated, based on interviews in which the subjects were prompted to elaborate on target word meanings if they were unable to give a full definition for each target word (see Nagy et al. for a fuller account of their procedure). Using these methods, Nagy et al. concluded that learning vocabulary from context is an incremental process due to the following factors: not all contexts provide meaningful information; words have multiple mean-

ings; and exposure to a word may present only one aspect of its meaning. They estimated that "at the most stringent criterion of what it means to know a word (Interview Level 3), the probability of learning an unknown word from an exposure in context is about .10 or .11" (p. 248). Consequently, learning vocabulary from context is an incremental process, in which partial learning can occur from one or a few exposures to new vocabulary terms.

The incremental learning of vocabulary from context is a significant source of vocabulary development over the long term. However, this does not automatically make it the only or even the most appropriate technique for building the learner's vocabulary at all stages of vocabulary acquisition. As will be argued later in this paper, the incremental learning of vocabulary in context is not necessarily an argument against the direct teaching of vocabulary. Although acknowledging that direct teaching quickly presents word meanings, Nagy et al. tend to present these methods as being rivals to one another. This is done by claiming that learning from context is more efficient that direct teaching methods since it would seem to account for the large number of vocabulary words learned. The authors estimate that L1 middle school learners are exposed to about a million words per year through reading, and they speculate that incremental learning through context could result in "the acquisition of several thousand words per year" (p.251).

Research Findings: Limits on the Pro Arguments

Contrary to the claims of Williams, Crow, and Nagy et al., learning vocabulary solely from context has not thus far been found to be more efficient than direct teaching methods for either L1 or L2. Chall (1987) states that research done on L1 learning in the 1960s and again in the 1980s "concluded that an early and explicit emphasis on the medium (on word recognition and decoding) was more effective for reading achievement, not only on tests of word recognition and oral reading, but on silent reading comprehension as well" (p.10). Despite evidence for the effectiveness of directly teaching words and sounds, contextual learning has remained popular at the expense of direct teaching methods. Chall traces this preference for context-based methods from the 1920s to 1970s, observing that direct teaching was often perceived to be less fun, more structured, and less open than "natural" language learning. Less structured and freer, "natural" language learning was assumed to be superior than direct teaching.

Reviews of L2 vocabulary learning research tend to confirm that learning vocabulary from context is no better than learning from word pairs. Nation (1982) cites several studies dating

from the 1930s to the 1970s and argues that most experiments have not clearly shown that learning words in context is any more effective than learning word pairs (p.23). Carter and McCarthy (1987) discuss a study by Pickering (1982) which claimed that context aided learning is slightly better than word pairs. However, Carter and McCarthy observe that Pickering's "conclusions are heavily qualified" and that the author acknowledged the necessity for doing further research. Carter and McCarthy suggest that learning words from multiple contexts may not be any better than using translation or a dictionary. Nation (1982) agrees and explains the reasoning for this position. Defenders of contextualized learning argue that it clarifies the part of speech and provides a natural word environment. But the part of speech is often maintained in translation; furthermore, a given context provides only one instance of word usage, while a dictionary can provide a more general and less restricted meaning than can a single context. Finally, using several L1 terms to express the varied meanings of an L2 word (i.e. multiple translations) may work as well as presenting an L2 word in a variety of L2 contexts and would require less time. Although a comparative study of the effectiveness of multiple translations versus multiple contexts as a means for learning the range of a word's meaning has not yet been carried out, the presentation of varied environments through multiple contexts has not been proven to be superior to translation.

Although the weight of the research argues against the exclusive use of contextualized vocabulary learning activities, recent calculations of a typical adult L1 learner's vocabulary size and the differences between L1 and L2 vocabulary exposure and acquisition qualify some of Nagy et al's claims. An adult native speaker with a university education has a recognition vocabulary of about 17,000 to 20,000 base words (Goulden & Nation, 1991; Nation, 1993). One result of this research is that educated adult native speakers appear to know far fewer base words than previously thought. And, although learning from context may account for a significant amount of vocabulary acquisition, Nagy et al's estimate of how many words per year are learned from context may be inflated if they assumed derived forms to be separate words. Since it is reasonable to expect learners to be able to identify at least some forms derived from base words, it would appear that L1 middle school learners do not need to acquire thousands of different words (base forms) per year. Consequently, directly teaching vocabulary is probably more efficient than previously imagined.

A further restriction on Nagys et al's claim is that L2 learners do not encounter as many words as L1 learners and that L2 learners are slower readers. L2 learners are not exposed to the million words per year that a middle school native learner is estimated to encounter.

Furthermore, as Haynes (1984) observes, L2 learners take more time looking at words because of the extra "time required for lexical access, that is, the time it takes for a reader to match the printed word to a word meaning in memory" (p.166). She concludes that skipping or guessing words as a part of a top-down strategy may not be appropriate for L2 learners who need to focus more on bottom-up recognition skills. In a similar vein, Nation and Coady (1988) point out that what poor L2 readers need is to develop sight vocabulary, i.e. the automatic recognition of words with or without context. Thus, while learning vocabulary from context seems to be an incremental process which develops over a long period of time, claims for its efficiency relative to other methods may be overstated.

Restrictions due to Vocabulary Size

One significant flaw common to Williams, Crow, and Nagy et al's arguments is that they fail to address the issue of the learners' vocabulary size. In the case of L1 vocabulary development, using context is more appropriate for learners in grades four or five; however, word recognition through the direct teaching of words and phonics is appropriate for grades one through three (Chall, 1987). Chall asserts that L1 learners need to develop bottom-up word recognition skills prior to developing a strategy for making contextual inferences.

Regarding L2 vocabulary learning, numerous scholars have noted that lack of L2 vocabulary is a primary factor in limiting the learner's ability to guess from context (Carter and McCarthy, 1987; Haynes, 1984; Laufer, 1992; Nation, 1982; Nation, 1993; and Parry, 1991). Central to the problem of low L2 proficiency is the need for building up the learners' knowledge of high-frequency and academic vocabulary. In a study that examined the relationship between second language lexical knowledge and general academic ability on reading comprehension, Laufer (1992) confirmed the hypothesis that, for learners with a lexical knowledge of less than the 3000 most frequent vocabulary words, "no amount of general academic ability, or reading skills in his/her L1 will make him/her read in a satisfactory manner" (p.100). Thus strategies for inferring vocabulary from context would not be very effective if learners are lacking a grasp of high frequency vocabulary. In order to make use of contextual information, Hirsh and Nation (1992) estimate that "95% coverage of text is needed to gain adequate comprehension and to guess unknown words from context" (p.690). This degree of vocabulary coverage means that only 1 out of 20 words, about one word for every two lines, of an unsimplified text is unknown; otherwise, the density of unknown words is too high

and the chances of successfully guessing vocabulary from context declines. To gain this 95% coverage requires knowing the 2000 (high frequency) words from West's 1953 *General Service List* and an additional 800 academic words from Xue and Nation's 1984 *University Word List*.[2] Thus, 2,800-3000 words appears to be a critical level of vocabulary knowledge, and L2 vocabulary proficiency below this level indicates that the teacher needs to emphasize vocabulary building more than reading skills such as guessing from context.

Limits on Comprehension

Even if the L2 learner is proficient, strategies for making contextual inferences can and do fail, especially when conditions for guessing are not favorable. The local context surrounding the unknown word may be of little or no asistance if it lacks redundancy and other clues for inferring a word's meaning. The difficulty of correctly inferring from context increases when information in the immediate context is lacking. Moreover, if the local context remains vague, then reliance on the broader context is frequently unsuccessful. Parry (1991) discovered that incorrect guesses from context were often due to "the general context, which allows plausible but nevertheless incorrect inferences as to meaning" (p.646). Kelly (1990) claims that correct guessing is only possible in cases where the context is highly constrained (i.e. when redundant information is plentiful), something which he claims to be a rare occurrence. After reviewing L1 research on contextual inferencing strategies, Schatz and Baldwin (1986) concluded that many studies used unnaturally context rich sentences or passages. In natural prose, however, they observed that the use of context clues leads to comprehension about as often as it leads to misinterpretations. Moreover, these clues "appear to be just as likely to result in confusion as in the correct identification of word meaning" (p.451). One factor influencing this is the degree to which the unknown word provides new information in the context. Context is less helpful in this case; when the unknown word is a high information word for a given sentence or passage, Schatz and Baldwin suggest using a dictionary or providing a glossary for it.

The Problem of Retention

In addition to helping comprehension only some of the time, inferring word meanings from context does not automatically lead to the retention of newly encountered vocabulary. As Nagy et al's 1985 study previously noted, the odds of learning new vocabulary from context is low

(about a 10% chance) for a given encounter. Nation and Coady (1988) suggested that the seeming advantages of context for recognition could result in the reader using the context to decipher the gist of the passage without learning the unknown word. In her case study of the methods used by a Greek male named Dimitri to learn academic vocabulary in a first-year Anthropology course, Parry (1991) observed that the subject sometimes seemed to ignore unknown words, as he strove to understand the general meaning of a passage. This strategy resulted in the subject misinterpreting a translation passage because he skipped over key terms. Furthermore, he retained few of his correct guesses. In a study of how contextually rich sentences affect the ability of Dutch secondary students to understand and to retain French concrete nouns, Mondria and Wit-De Boer (1991) found that context had either a neutral or a negative effect on retention. Although context did improve comprehension, context-rich subjects and verbs did not influence retention, while context-rich functions actually resulted in lower retention. Judging from Parry's (1991) case study of Ae Young, a Korean female studying the same Anthropology course as Dimitri, retention requires the learner to be actively engaged in pursuing word meaning. Unlike Dimitri, Ae Young tended to retain her guesses probably because she carefully examined the local context. Unfortunately her guesses were often incorrect and were not revised, even though she had checked her answers using a dictionary. This clearly suggests that, when incorrect guesses occur, some effort has to be made to associate the unknown word with a more correct choice and to re-examine why this new choice fits the context.

A Procedure for Inferring from Context

Although learning vocabulary from context is not the sole means of building a large receptive vocabulary, it is still a necessary tool, which can be used most effectively when teachers and learners are aware of its limitations. Consequently, it is worthwhile for teachers to develop an overall procedure to assist learners in applying this technique. The following approach from Nation and Coady (1988) emphasizes the importance of local context and double checking inferences by reviewing context and consulting dictionaries. This approach should be viewed as a flexible one, and learners should be encouraged to experiment in order to determine an effective method for themselves.

Although it requires a substantial amount of time at first, developing a method for inferring from context should become more efficient with practice. Nation and Coady (1988) ac-

BEST COPY AVAILABLE

knowledge that "initially the strategy is a major interruption to the reading process while learners develop familiarity with the range of clues available" (p.105). Their five step strategy starts with the learner determining the unknown word's part of speech; this will later be compared to the learners' guess of the unknown word's meaning in the final step. Secondly, learners should carefully examine and perhaps simplify the local context. At this stage one looks at how different words function in the context ("what does what?") as well as checking the punctuation, related phrases and/or relative clauses. Nation suggests that learners practice simplifying sentences by removing conjunctions from between independent clauses to clarify the meaning of each clause. This stage requires thorough explication and practice in order to counter what Parry (1991) noted as a common failure to use syntactic cues (p.647). This, as well as the next stage, would benefit from the use of an overhead projector, as exemplified in William's (1986) description, which employs symbols and arrows to make explicit the cognitive processes used in decoding vocabulary meaning.

In the third step, learners analyze the relationships of other clauses or sentences (cause and effect, contrasts, etc.) that precede and follow the sentence containing the word being guessed. Since these relationships are often implicit, this means that learners need to identify them and make them explicit. The authors also add that learners should observe referential clues such as pronouns and complete comparative structures. The fourth step is to guess, and the final step requires checking one's guess. At this point the learner compares his or her guess to the part of speech chosen in the first step and applies word analysis, if relevant. Choosing incorrect parts of speech and making faulty word analysis can be reduced if done last and double checked. Kelly (1990) observes, however, that learners will probably not delay word analysis; thus, learners need to rethink their word analysis and be willing to reject their initial guess, if the guess fails to make sense once it is substituted into the sentence. Finally, the guess should be compared to a dictionary entry. As incorrect inferences may be retained in memory, learners need to revise mistaken inferences and check whether they have missed context clues as a way to reinforce the most correct answer.

The steps in the above procedure for learners can be summarized as follows:

1. Determine the part of speech.
2. Examine and, if needed, simplify the context surrounding the unknown word.
3. Analyze the clauses and sentences before and after the sentence containing the unknown word to determine the relationships between them.
4. Guess the unknown word.

5. Compare the guess to the part of speech of the unknown word and to the context while being aware of the potential for faulty word analysis. If needed use a dictionary to check the guess. Reanalyze the context as needed.

Conclusion and Implications for Pedagogy

Having considered some of the central problems of guessing from context, it is clear that to increase the chances of making successful inferences certain conditions need to apply. First, this technique will work best when learners have the ability to recognize several thousand high-frequency words. Second, the density of unknown words cannot be too high. Third, the global context and especially the local context should contain relevant and redundant supporting cues. Fourth, learners should ideally develop a sense of when unknown words provide new information and need to recognize when context is not helpful for making inferences. Fifth, learners need to learn how and when to use other resources such as native speakers and dictionaries.

In teaching how to infer from context it should be remembered that this technique is a part of a larger reading method and is just one of many vocabulary learning techniques. It is assumed that teachers have presented exercises which teach students to activate their schema prior to or concurrent with learning to infer from context. With practice one would expect learners to become selective in their use of any one strategy to determine word meaning. First, students need to identify which words are essential for understanding the meaning of a sentence or passage (Parry, 1991). For example, proper nouns can often be skipped as long as the learner understands that the proper noun refers to a person, plant, animal etc. When learners decide that further investigation of a particular word is probably necessary, then they can experiment with whatever strategy might work best. After carefully checking the local context, learners may proceed with inferring the meaning, or choose to consult a dictionary or native speaker etc. As Haynes (1984) states, one of the goals of teaching reading skills is to promote a flexible strategy in which students know "where and how to look for meaning when the handiest sources of information fail to make sense" (p.174).

Notes

1) Word analysis out of context does tend to produce errors according to Nation and Coady (1988). However, as this paper argues, Williams' claim overgeneralizes the need for context while neglecting the benefits of studying words through word lists and pair translations.

2) While some of the terms on the *General Service List* (1953) are dated, it is still considered to be useful. The *University Word List* (1984) is available in appendix 2 of Nation's *Teaching and Learning Vocabulary*, pages 235-239. This same text by Nation also provides vocabulary level tests which can be used to estimate a learner's knowledge of these 2000 high frequency and 800 academic words.

References

Buikema, J. L. & Graves, M. F. (1993). Teaching students to use context clues to infer word meanings. *Journal of Reading* 36, 6: 450-457.

Carrell, P. L. (1991). Second language reading: teaching ability or language proficiency? *Applied Linguistics* 12, 2: 159-179.

Carter, R. & McCarthy, M. (1988). Word lists and learning words: some foundations. In R. Carter & M. McCarthy (Eds.), *Vocabulary and Language Teaching*, 1-17. London: Longman.

Chall, J. S. (1987). Two vocabularies for reading: recognition and meaning. In M.G. McKeown, & M.G. Curtis (Eds.), *The Nature of Vocabulary Acquisition*, 7-17. Hillsdale, NJ: Lawrence Erlbaum.

Channell, J. (1988). Psycholinguistic considerations in the study of L2 vocabulary acquisition. In R. Carter & M. McCarthy (Eds.) *Vocabulary and Language Teaching*, 83-96. London: Longman.

Crow, J. T. (1986). Receptive vocabulary acquisition for reading comprehension. *The Modern Language Journal* 70, 3: 242-250.

Goulden, R. & Nation, I.S.P. & Read, J. (1991). How large can a receptive vocabulary be? *Applied Linguistics* 11, 4: 341-363.

Haynes, M. (1984). Patterns and perils of guessing in second language reading. In J. Handscombe, R.A. Orem, & B.P. Taylor, (Eds.) *On TESOL '83: The Question of Control*, 163-76. TESOL.

Hirsh, D. & Nation, I.S.P. (1992). What vocabulary size is needed to read unsimplified texts for pleasure? *Reading in a Foriegn Language* 8, 2: 689-696.

Kelly, P. (1990). Guessing: no substitute for systematic learning of lexis. *System* 18, 2: 199-207.

Laufer, B. (1992). Reading in a foreign language: how does L2 lexical knowledge interact with the reader's general academic ability? *Journal of Research in Reading* 15, 2: 95-103.

Mondria, J. & Wit-de Boer, M. (1991). The effects of contextual richness on the guessability and the

retention of words in a foreign Language. *Applied Linguistics* 12, 3: 249-267.

Nagy, W.E. & Herman, P. & Anderson, R.C. (1985). Learning words from context. *Reading Research Quarterly* 20, 2: 233-253.

Nation, I.S.P. (1982). Beginning to learn foreign vocabulary: a review of the research. *RELC Journal* 13, 1: 14-36.

Nation, I.S.P. (1990). *Teaching and Learning Vocabulary*. New York: Newbury House Publishers.

Nation, I.S.P. (1993). Vocabulary size, growth, and use. In R.Schreuder and B. Weltens (Eds.). *The Bilingual Lexicon*, 115-135. Philadelphia: John Benjamins Publishing Co.

Nation, I.S.P. & Coady, J. (1988). Vocabulary and reading. In *Vocabulary and Language Teaching*. R. Carter and McCarthy (eds). London: Longman.

Nattinger, J. (1987). Some current trends in vocabulary teaching. In R. Carter & M. McCarthy (Eds.) *Vocabulary and Language Teaching*, 62-81. Longman.

Parry, K. (1991). Building a vocabulary through academic reading. *TESOL Quarterly* 25, 4: 629-653.

Schatz, E. K. & Baldwin R. S. (1986). Context clues are unreliable predictors of word meanings. *Reading Research Quarterly* 21, 4: 439-453.

West, M. (1953). *A General Service List of English Words*. Longman, Green and Co., London.

Williams, R. (1985). Teaching vocabulary recognition strategies in ESP reading. *The ESP Journal* 4, 2: 121-131.

Xue Guoyi & Nation I.S.P. (1984). A university word list. *Language Learning and Communication* 3, 2: 215-229.